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ART UNIT	**PAPER NUMBER**
3627	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/708,119	ORZELL ET AL.	
	Examiner	Art Unit	
	PAUL DANNEMAN	3627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *31-33* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Respond to Amendment

1. Applicants have amended Claims 8, 22 and 30 to correct antecedent basis error and no new matter has been added.
2. Applicants have amended Claims 1, 8, 15, 29 and 30.
3. Applicants have added new Claims 31-33.
4. No claims have been cancelled.

Response to Arguments

5. Applicants argue that ***"Dangat does teach creating a feasible schedule while Applicant's invention teaches receiving a feasible schedule."*** Applicant in Claim 1 clearly states ***"receiving feasible schedule of all components to be assembled into products; receiving customer schedules for delivery of said products; generating from said feasible schedule, from said customer schedules....to generate demand pegging record consistent with said feasible schedule."*** Applicants in paragraph [0022] discloses that **"A feasible schedule is defined as a schedule for a supply chain wherein availability or shipment dates of component assets required to produce a final product and to support a shipment date of the final product..."** Applicants further disclose **"A demand pegging schedule is consistent with a feasible schedule by definition when quantities and dates of customer shipments and those dates in the production-scheduling run (PSR) are identical and the demand pegging file reflects the same sources of components as the PSR."** Given that Applicant has a "feasible schedule for components", a "customer schedule" and is using those two schedules to generate "demand pegging records which are consistent with said feasible schedule", the "demand pegging records". How the "demand pegging records" generated by applicant's invention will be utilized is unknown. The Examiner and one of ordinary skill can only suspect that the "demand pegging records" will eventually be used to determine if the organization has or will have a valid

production-scheduling run (PSR). Dangat creates “demand pegging records” and a feasible schedule (production schedule) which has considerable utility.

6. Applicants further argue with regard to Claims 1, 15 and 29 and their dependent claims ***“Dangat does (***Examiner corrected the spelling of does***) not teach or suggest generating from said feasible schedules, from said customer schedules and from bills of materials listing all components required for each of said products first and second coverage files, said first coverage file containing a list of assets to be used for product shipments and components to assembled into products to meet product shipment demands, said second coverage file containing a list of all other assets.”*** Respectfully the Examiner must disagree. Dangat in at least Column 7, lines 11-13 discloses an implode, “forward”, or feasible plan component which generates the best can do match between assets and demands. Dangat in at least Fig.2 discloses entering “demands with priorities” 201 production and distribution info (business policies, asset status, manufacturing specifications) and in Column 4, lines 55-59 discloses the object of the invention to be that of matching existing assets and demands across multiple manufacturing facilities. Clearly this matching of assets to demands is the same as the applicant’s two coverage files (demands plus assets and other assets). Therefore, Claims 1, 15, and 29 and their dependent claims are properly rejected and remain rejected.

7. Applicants further argue regarding Claims 1, 15 and 29 and their dependent claims ***“Dangat does not teach or suggest generating from said from said first and second coverage files, a set of demand pegging records."*** Respectfully the Examiner must disagree. While Dangat does not use the terminology “coverage files” to generate "demand pegging records" the end result is the same. Dangat in at least Column 7, lines 15-18 discloses generating a pegging or supply chain analysis report. Dangat in at least Column 8, lines 46-49 further discloses that the “pegging” or supply chain analysis component converts the solution into a pegging report that explains the solution and has a look and feel with which production planning people are familiar with. While Dangat does not specifically map one-to-one with Applicant’s coverage files, the end product (demand pegging) is the same. Therefore, Claims 1, 15, and 29 and their dependent claims are properly rejected and remain rejected.

8. Applicants further argue regarding Claims 5 and 19 that ***"Dangat does not teach or suggest generating additional demand pegging records for unused binned components that are available in quantities in excess of those required for assembly of said products."*** **Examiner's Note:** Claim 5 and 19 have limitations that have intended use limitations which do not differentiate the claimed method and apparatus over the prior art. It has been held that such claims are not a positive limitation, but only require the ability to perform. MPEP 2114 and Ex parte Masham, 2 USPQ2d 1647 (1987). Dangat has the ability to perform the generation of demand pegging; therefore Claims 5 and 19 are properly rejected.

9. Applicants further argue regarding Claims 6 and 20 ***that "Dangat does not teach or suggest generating demand pegging records in low-level-code sequence from a lowest low-level-code assigned to completed products to a highest low level code assigned to a starting component of a completed product."*** Respectfully the Examiner must disagree. Dangat in at least Fig.3 discloses calculating low level code for all part numbers through each level and consolidating into report and files in block 309. Dangat in at least Column 12, lines 54-67 further discloses imploding part numbers for a specified reverse low level code (matching assets against requested demand). Clearly this indicates a process for the generation of demand pegging records. Therefore Claims 6 and 20 are properly rejected and remain rejected.

10. Applicants argue regarding Claims 8, 22 and 30 that Dangat does not teach or suggest ***"(a) mapping a planned inventory requisition file comprising component availability schedules and a customer demand file comprising product shipment schedules for products assembled from components into a requisition map file associating said component availability schedules and said product shipment schedules and including quantities of each component to be used for each product, each component and product having a low-level-code indicating a sequence in which said components are assembled into said products and each product and component having a unique part-number."*** Respectfully, the Examiner disagrees. Steps (a)-(h) of Claims 8, 22 and 30 are directed to mapping all demand and production capability to generate "demand pegging records." Dangat in at least Column 4, lines 55-67 discloses a computer implemented decision support tool generating a best-can-do (BCD) match between existing assets and demands across multiple manufacturing facilities

to insure delivery commitments are met in a timely fashion. Dangat in at least Column 6, lines 5-9 further discloses converting the BCD solution into a "pegging" report format thereby providing a superior supply chain analysis.

Dangat in at least FIG.3, Column 9, lines 12-26 further discloses the MRP process of the BCD tool begins by calculating the low level code for all part numbers and the classification of each part as binned or non-binned and when all parts have been processed reports and files are consolidated in block 309. Dangat in at least Column 9, lines 26-38 further discloses that the MRP component of the BCD uses traditional logic well known to anyone practiced in the art of moving backwards through the BOM according to low level code. Clearly to one of ordinary skill, demands encompasses customer demands with priorities as shown in Fig.2 and would include components, schedules (deliver and availability), part numbers, low-level-codes for block 202 to function with assets as intended to produce a pegging report.

11. Applicants argue regarding Claims 8, 22 and 30 that Dangat does not teach or suggest ***"(b) selecting all records from said requisition map file of components or products having low-level-codes equal to a current low-level-code."*** Respectfully, the Examiner disagrees. Steps (a)-(h) of Claims 8, 22 and 30 are directed to mapping all demand and production capability to generate "demand pegging records." Dangat in at least Fig.3 and the associated text discloses an iterative process for calculating the low-level-codes for **all part numbers**.

12. Applicants argue regarding Claims 8, 22 and 30 that Dangat does not teach or suggest ***"(f) mapping said coverage file and records of corresponding part numbers from said requisition map file into a demand pegging output file comprising demand pegging output records, said demand pegging records associating a quantity and an availability date of each component required to produce a required quantity of each of said products, each demand pegging record consistent with said feasible schedule."*** Respectfully, the Examiner disagrees. Steps (a)-(h) of Claims 8, 22 and 30 are directed to mapping all demand and production capability to generate "demand pegging records." Dangat in at least Column 6, lines 5-9 discloses that the best-can-do (BCD) solution is converted into a "pegging" report format. Dangat in at least Column 6, lines 42-50 further discloses that BCD is a match between existing assets and demands across multiple manufacturing facilities. Dangat in at least Column

8, lines 46-49 further discloses that the "pegging" or supply chain analysis component converts the solution into a pegging report that explains the solution and has a look and feel with which production planning people are familiar.

13. Applicants argue regarding Claims 8, 22 and 30 that Dangat does not teach or suggest ***"(g) generating additional records in said requisition mapping file for components required to fabricate products whose records were mapped into said demand pegging output file in step (f)."*** Respectfully the Examiner disagrees. Steps (a)-(h) of Claims 8, 22 and 30 are directed to mapping all demand and production capability to generate "demand pegging records." Dangat in at least Column 6, lines 5-9 discloses that the best-can-do (BCD) solution is converted into a "pegging" report format. Dangat in at least Column 6, lines 42-50 further discloses that BCD is a match between **existing assets and demands** across multiple manufacturing facilities. Clearly a demand record must be created for all components required to fabricate products, otherwise the demand record would not accurately map demands to assets.

14. Applicants argue ***"(1) Applicant fail to understand how modifications the Examiner alleges to claims 1, 15 and 29 have noting to do with claims 8, 22 and 30."*** Examiner in the rejection included the modifications of Claims 1, 15 and 29 in rejecting Claims 8, 22 and 30.

15. Applicants argue ***"(2) Applicants fail to understand how the motivation "to create a feasible schedule for a semiconductor manufacturing facility" is applicable, when claims 8, 22, and 30 do not claim "creating a feasible schedule."*** The limitation is being read in-light of Applicant's specification which discloses **"A demand pegging schedule is consistent with a feasible schedule by definition when quantities and dates of customer shipments and those dates in the production-scheduling run (PSR) are identical and the demand pegging file reflects the same sources of components as the PSR."** Given that Applicant has a "feasible schedule for components", a "customer schedule" and is using those two schedules to generate "demand pegging records which are consistent with said feasible schedule", the "demand pegging records" will eventually be used to determine if the organization will have a valid production-scheduling run (PSR) where assets and the feasible schedule of components are not over committed. Therefore, Claims 8, 22 and 30 are properly rejected and remain rejected.

Election/Restrictions

16. Newly submitted **claims 31-33** are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: **Firstly**, Applicant states that the new Claims 31-33 are supported by FIGs. 1A, 1B and 1C and associated descriptions. The Examiner is unable to find support for Claims 31-33. **Secondly**, Claims 31-33 change the scope of the invention, the invention is now directed to disaggregating product quantities from feasible schedules, customer schedules and bills of materials to create two sets of pegging records. The initial scope of the invention was to match a "feasible component schedule" to "customer schedules" to generate component/asset demand pegging record.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 31-33 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

17. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

18. **Claims 1, 8, 15, 22, 29 and 30** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants in paragraph [0022] discloses that **"A feasible schedule is defined as a schedule for a supply chain wherein availability or shipment dates of component assets required to produce a final product and to support a shipment date of the final product..."** Applicants further disclose **"A demand pegging schedule is consistent with a feasible schedule by definition when quantities and dates of customer shipments and those dates in the production-scheduling run (PSR) are identical and the demand pegging file reflects the same sources of components as the**

PSR." Given a "feasible schedule for components", a "customer schedule" to generate "demand pegging records which are consistent with said feasible schedule" is being interpreted as validating a production-scheduling run (PSR).

Claim Rejections - 35 USC § 103

19. **Claims 1-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dangat et al, US 5,792,585 hereafter known as Dangat.

As per Claims 1, 15 and 29, Dangat in at least Fig.2 discloses entering "demands with priorities" 201 production and distribution info (business policies, asset status, manufacturing specifications) and in at least Column 4, lines 55-67 discloses a computer implemented decision support tool generating a best-can-do (BCD) match between existing assets and demands across multiple manufacturing facilities to insure delivery commitments are met in a timely fashion. Dangat in at least Column 6, lines 5-9 further discloses converting the BCD solution into a "pegging" report format thereby providing a superior supply chain analysis.

Dangat in at least Column 6, lines 10-26 still further discloses assets include, but are not limited to, planned STARTS (starts at the lower level of the BOM), WIP (work in progress), inventory, purchases, and capacity. Demands include, but are not limited to, firm orders, forecasted orders and inventory buffer. The matching between existing assets and demands must take into account manufacturing specifications and business guidelines. Manufacturing specifications and process flows include, but are not limited to, build options, BOM (bill of material), yields, cycle times, receipt dates, capacity consumed, capacity available, substitutions (allowable substitutions), binning or sorting and shipping times. Business guidelines include, but are not limited to, frozen zones, demand priorities, priority trade-offs, preferred suppliers, and inventory policy. Build options, BOM, yields, cycle times, capacity, allowable substitutions, binning, inventory policy and supplier preferences are date effective.

While Dangat does not use the terminology "coverage files" to generate "demand pegging records" the end result is the same. Dangat in at least Column 7, lines 15-18 discloses generating a pegging or

supply chain analysis report. Dangat in at least Column 8, lines 46-49 further discloses that the "pegging" or supply chain analysis component converts the solution into a pegging report that explains the solution and has a look and feel with which production planning people are familiar with.

Dangat in at least Column 10, lines 66-67 and Column 11, lines 1-11 discloses establishing low level code information to insure the heuristic implode step proceeds in the appropriate order. Dangat in at least Column 11, lines 40-57, Column 12, lines 30-53 and Column 12, lines 54-67 discloses additional uses of the low level code.

Dangat in at least Column 8, lines 46-49 further discloses that the "pegging" or supply chain analysis component converts the solution into a pegging report that explains the solution and has a look and feel with which production planning people are familiar. While Dangat does not specifically map one-to-one with Applicant's coverage files, the end product (demand pegging) is the same.

As per Claims 2, 3, 16, and 17, Dangat in at least Column 9, lines 1-10 discloses the MRP component of BCD moving backwards through the production specification files and asset files to calculate exploded, interplant transfer, and substitution demand and total demand on every part number/location necessary to support the required demand. Dangat in at least Column 10, lines 1-15 further discloses that if the maximum numbers of chips required for a product with the highest demand (adjusted for yield) are manufactured there will be sufficient numbers of co-product chips to meet the demands for those requirements as well. Dangat further discloses that some chips can be substituted for other chips to meet their demand (i.e. supplying a FAST chip where a SLOW chip is required).

As per Claims 4, 5, 18 and 19, Dangat in at least Column 8, lines 46-67 discloses that the BCD system has a "pegging" or supply chain analysis component which converts the solution into a pegging report that explains the solution and has a look and feel with which production planning people are familiar with. Dangat further discloses that BCD system has an MRP with special logic to (a) avoid over building binned parts. Clearly Dangat attempts to prevent overbuilding which results in unused binned components. Dangat in FIG.2 and Column 9, lines 1-10 discloses the MRP component of BCD moving backwards

through the production specification files and asset files (inventory and WIP or receipts) to calculate exploded, interplant transfer and substitution demand and total demand on every part number/location necessary to support demands with priorities block 201 of FIG. 2. Dangat uses inventory (excess binned components which resulted from “overbuilding”, canceled customer orders, etc.), WIP and receipts to adjust the required STARTS and "pegging" of the BCD solution similar to Applicant’s generation of additional demand pegging records for unused binned components.

Examiner’s Note: Claim 5 and 19 have limitations that have intended use limitations which does not differentiate the claimed method and apparatus over the prior art. It has been held that such claims are not a positive limitation, but only require the ability to perform. MPEP 2114 and Ex parte Masham, 2 USPQ2d 1647 (1987).

As per Claims 6 and 20, Dangat in at least FIG.2, Column 8, lines 59-67 and Column 9, lines 1-10 discloses a STARTS file for parts that have no further bill of material (reverse low level code of 1, often wafer STARTS in semiconductor manufacturing). Dangat in at least FIG.3, Column 9, lines 12-26 further discloses the MRP process of the BCD tool beginning by calculating the low level code for all part numbers and the classification of each part as binned or non-binned and when all parts have been processed, reports and files are consolidated in block 309. Dangat in at least Column 9, lines 26-38 further discloses that the MRP component of the BCD uses traditional logic well known to anyone practiced in the art of moving backwards through the BOM according to low level code.

Dangat in at least FIG.2, Column 10, lines 66-67 and Column 11, lines 1-11 discloses establishing low level code information to insure the heuristic implode step proceeds in the appropriate order. Dangat further discloses that for purposes of further discussion, defines a part number to have a reverse low level code of one if it has no components. Dangat in at least Column 11, lines 40-57, Column 12, lines 30-53 and Column 12, lines 54-67 discloses additional uses of the low level code such as imploding part numbers for a specified reverse low level code (matching assets against requested demand).

As per Claims 7 and 21, Dangat in at least Column 1, lines 23-30 discloses four decision or scheduling tiers common in semiconductor manufacturing. Dangat in at least Column 1, lines 47-59 discloses a first tier dealing with strategic scheduling which is driven by the time frame or lead time required for the business plan, resource acquisition, and new product introduction. Dangat in at least Column 1, lines 66-67 and Column 2, lines 1-16 further discloses a second tier dealing with tactical scheduling which addresses the problems the company faces in the next week to six months. Items such as yields, cycle times, binning percentages, permissible substitutions and the scheduling of starts or releases into manufacturing, delivery dates for firm orders, order/release plans and reschedules are estimated, generated and planned. Dangat in at least Column 2, lines 16-29 further discloses a third tier called operational scheduling which deals with the execution and achievement of a weekly plan, shipments are made and tools used to support the activities are decision support, recovery models, prioritization techniques and deterministic forward schedulers. Dangat in at least Column 2, lines 30-52 still further discloses a fourth tier or dispatch scheduling tier which addresses problems of the next hour to a few weeks by responding to conditions as they emerge in real time and accommodates variances from availability assumed by systems in the plan creation and commitment phases.

Dangat in at least Column 11, lines 4-11 further discloses the BCD engine permitting the user to modify STARTS, RECEIPTS, and CAPACITY AVAILABLE prior to executing the forward or implode component which generates the feasible schedule, plan, or match. Dangat in at least FIG.2 and Column 22, lines 1-14 further discloses that the report issued in block 220 shows the details of any customer order with respect to the part, and the recommended shipment schedule, if any, as a result of the latest BCD run. The shipment schedule is followed by a series of supply chain information leading to the shipment schedule. The supply chain information includes part (component) numbers, date the (independent or dependent) demand for a part (component) numbers, date the (independent or dependent) demand for a part (component) is satisfied, how and how much of the demand is satisfied (e.g., from inventory, future receipts, intersite shipments, vendor shipments, substitutions, or production starts).

Dangat in at least FIG.9 and Column 22, lines 23-56 still further discloses customer shipment schedule being created from the NEWNEEDS file and into the NEWNEEDSTOT and assigning inventory of assets to the need of matching parts in the NEWNEEDS file on a first-in, first-out (FIFO) basis.

Dangat in at least Column 6, lines 10-26 still further discloses assets include, but are not limited to, planned STARTS (starts at the lower level of the BOM), WIP (work in progress), inventory, purchases, and capacity. Demands include, but are not limited to, firm orders, forecasted orders and inventory buffer. The matching between existing assets and demands must take into account manufacturing specifications and business guidelines. Manufacturing specifications and process flows include, but are not limited to, build options, BOM (bill of material), yields, cycle times, receipt dates, capacity consumed, capacity available, substitutions (allowable substitutions), binning or sorting and shipping times. Business guidelines include, but are not limited to, frozen zones, demand priorities, priority trade-offs, preferred suppliers, and inventory policy. Build options, BOM, yields, cycle times, capacity, allowable substitutions, binning, inventory policy and supplier preferences are date effective.

Dangat in at least Column 10, lines 66-67 and Column 11, lines 1-11 discloses establishing low level code information to insure the heuristic implode step proceeds in the appropriate order. Dangat in at least Column 11, lines 40-57, Column 12, lines 30-53 and Column 12, lines 54-67 discloses additional uses of the low level code.

As per Claims 8, 14, 22, 28 and 30, the limitations of 8(a), 14, 22(a), 28 and 30(a) Dangat in at least Column 4, lines 55-67 discloses a computer implemented decision support tool generating a best-can-do (BCD) match between existing assets and demands across multiple manufacturing facilities to insure delivery commitments are met in a timely fashion. Dangat in at least Column 6, lines 5-9 further discloses converting the BCD solution into a “pegging” report format thereby providing a superior supply chain analysis.

Dangat in at least FIG.3, Column 9, lines 12-26 further discloses the MRP process of the BCD tool beginning by calculating the low level code for all part numbers and the classification of each part as binned or non-binned and when all parts have been processed reports and files are consolidated in block

309. Dangat in at least Column 9, lines 26-38 further discloses that the MRP component of the BCD uses traditional logic well known to anyone practiced in the art of moving backwards through the BOM according to low level code.

Dangat in at least FIG.2, Column 10, lines 66-67 and Column 11, lines 1-11 discloses establishing low level code information to insure the heuristic implode step proceeds in the appropriate order. Dangat further discloses that for purposes of further discussion, defines a part number to have a reverse low level code of one if it has no components. Dangat in at least Column 11, lines 40-57, Column 12, lines 30-53 and Column 12, lines 54-67 discloses additional uses of the low level code.

Dangat in at least Column 8, lines 46-67 discloses that the BCD system has a "pegging" or supply chain analysis component which converts the solution into a pegging report that explains the solution and has a look and feel with which production planning people are familiar with. Dangat further discloses that BCD system has an MRP with special logic to (a) avoid over building binned parts. Dangat in FIG.2 and Column 9, lines 1-10 discloses the MRP component of BCD moving backwards through the production specification files and asset files (inventory and WIP or receipts) to calculate exploded, interplant transfer and substitution demand and total demand on every part number/location necessary to support demands with priorities block 201 of FIG. 2.

As per limitations of Claims 8(b), 22(b) and 30(b): Dangat in at least Fig.3 and the associated text discloses an iterative process for calculating the low-level-codes for **all part numbers**.

As per limitations of Claims 8(c-e), 9-10, 22(c-e), 23-24 and 30(c-e): Dangat in at least Column 1, lines 66-67 and Column 2, lines 1-16 further discloses a second tier dealing with tactical scheduling which addresses the problems the company faces in the next week to six months. Items such as yields, cycle times, binning percentages, permissible substitutions and the scheduling of starts or releases into manufacturing, delivery dates for firm orders, order/release plans and reschedules are estimated, generated and planned.

Dangat in at least Column 11, lines 40-57 further discloses the output of the BCD MRP block establishing a list of required starts (part identification, quantity, start date, and priority) for parts which have no further bill of material; that is having reverse low level code of one in block 208 and modifying or adjusting the

start date for any one of or all the items in the STARTS file. Dangat in at least FIG.6 and Column 12, lines 30-53 further discloses adjusting (delaying or accelerating) a start to deal with capacity issues, demand class and date.

Dangat in at least Column 6, lines 10-26 still further discloses assets include, but are not limited to, planned STARTS (starts at the lower level of the BOM), WIP (work in progress), inventory, purchases, and capacity. Demands include, but are not limited to, firm orders, forecasted orders and inventory buffer. The matching between existing assets and demands must take into account manufacturing specifications and business guidelines. Manufacturing specifications and process flows include, but are not limited to, build options, BOM (bill of material), yields, cycle times, receipt dates, capacity consumed, capacity available, substitutions (allowable substitutions), binning or sorting and shipping times. Business guidelines include, but are not limited to, frozen zones, demand priorities, priority trade-offs, preferred suppliers, and inventory policy. Build options, BOM, yields, cycle times, capacity, allowable substitutions, binning, inventory policy and supplier preferences are date effective.

Dangat in at least Column 22, lines 57-60 discloses that the BCD tool allows the user to dynamically personalize the BCD to best meet the needs of the business situation. Dangat in at least Column 22, lines 61-67, FIG.10 and Column 23, lines 1-3 discloses a scenario where the user exercises all three major stages (backwards (explode), adjustment, and forward (implode) of the BCD tool), but only uses the heuristic implode component for situations where a set of products with simple product structures and either many parts or many days in the planning horizon.

Dangat in at least FIG.11 and Column 23, lines 4-10 further discloses a second scenario commonly used for runs on very large data sets, where only explode and implode are used and the user chooses not to make any adjustments to the STARTS file or the receipts file.

Dangat in at least FIG.12 and Column 23, lines 11-18 further discloses a third scenario used when the production planning group is attempting to determine their START plan for a time unit (month, three months, etc.) where the user runs the explode and creates and saved a required starts and receipts due date files and save. The user wished to run a set of “what-if” scenarios with different adjusted STARTS and receipts.

Dangat in at least FIG.13 and Column 23, lines 19-27 further discloses a fourth scenario used when there are a set of products with complex product structures (multiple processes and substitution) and either a reasonable number of parts and/or time buckets where the user exercises all three major stages (backwards (explode), adjustment, and forward (implode) of the BCD tool), but only uses the LP implode component and not the heuristic implode component or the adjust capacity step.

Dangat in at least FIG.14 and Column 23, lines 28-32 further discloses a fifth scenario where the user executes the LP implode engine in stand alone mode. The LP engine is capable of creating a feasible solution without a STARTS file and using the original receipts and capacity files in the input block.

As per limitations of Claims 8(f), 22(f) and 30(f): Steps (a)-(h) of Claims 8, 22 and 30 are directed to mapping all demand and production capability to generate "demand pegging records." Dangat in at least Column 6, lines 5-9 discloses that the best-can-do (BCD) solution is converted into a "pegging" report format. Dangat in at least Column 6, lines 42-50 further discloses that BCD is a match between existing assets and demands across multiple manufacturing facilities. Dangat in at least Column 8, lines 46-49 further discloses that the "pegging" or supply chain analysis component converts the solution into a pegging report that explains the solution and has a look and feel with which production planning people are familiar.

As per limitations of Claims 8(g), 11, 22(g), 25 and 30(g): Steps (a)-(h) of Claims 8, 22 and 30 are directed to mapping all demand and production capability to generate "demand pegging records." Dangat in at least Column 6, lines 5-9 discloses that the best-can-do (BCD) solution is converted into a "pegging" report format. Dangat in at least Column 6, lines 42-50 further discloses that BCD is a match between **existing assets and demands** across multiple manufacturing facilities. Clearly a demand record must be created for all components required to fabricate products, otherwise the demand record would not accurately map demands to assets.

As per the limitation of Claims 12-13 and 26-27:

Selecting binned components in excess of required quantity and adding an additional record.

Calculating the quantity of each common component required based on the binning percentages.

Dangat in at least Column 1, lines 66-67 and Column 2, lines 1-16 further discloses a second tier dealing with tactical scheduling which addresses the problems the company faces in the next week to six months. Items such as yields, cycle times, binning percentages, permissible substitutions and the scheduling of starts or releases into manufacturing, delivery dates for firm orders, order/release plans and reschedules are estimated, generated and planned. Dangat in at least FIG.3, Column 9, lines 12-26 further discloses the MRP process of the BCD tool beginning by calculating the low level code for all part numbers and the classification of each part as binned or non-binned and when all parts have been processed reports and files are consolidated in block 309. Dangat in at least Column 9, lines 26-38 further discloses that the MRP component of the BCD uses traditional logic well known to anyone practiced in the art of moving backwards through the BOM according to low level code to avoid massive over-statement of starts required.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Lin, US 6,434,443 B1. Teaches a method for performing dynamic re-scheduling of a fabrication plant.

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL DANNEMAN whose telephone number is (571)270-1863. The examiner can normally be reached on Mon.-Thurs. 6AM-5PM Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Florian Zeender can be reached on 571-272-6790. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul Danneman/

Examiner, Art Unit 3627

10 December 2008

/F. Ryan Zeender/
Supervisory Patent Examiner, Art Unit 3627